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CLINICAL - LABORATORY JUSTIFICATION OF DEPENDENCE OF PERIODONTAL INFLAMMATORY DISEASES ON THE CONDITION OF HEPATOBILIARY SYSTEM

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In correspondence with the existing ideas about the pathogenesis of hepatic-oral syndrome development the disorder of antimicrobial function of the liver is crucial. The findings of the study of the tissue condition of parodontium in 128 patients have been described. They include clinical observations and index evaluation (OHI-S, PMA, PBI), as well as liver markers in blood serum. The conducted clinical- laboratory research ascertained, that patients with hepatobiliary pathology have increased probability of occurrence of periodontal inflammatory diseases, while after treatment of liver diseases, periodontal indices and hygiene index significantly decreased. These data indicate about dependence of the condition of periodontal tissues on hepatic biliary system.

Key words: hepatobiliary pathology, inflammatory periodontal disease, index score.

Periodontal inflammatory diseases are caused by combined influence of both local and general factors on the background of decreased reactivity of the body [1, 5-7]. Systematic processes which lead to changes in the body and consequently periodontal lesions are also of great importance [3]. Dysfunction of hepatobiliary system affects the whole body, as there is no such link of metabolism which would not have tight connection with all the processes occurring in liver [4]. According to existing ideas about pathogenesis of hepatic-oral syndrome development lesions of antimicrobial function of liver are crucial [8-10]. Consequently, translocation of conditionally pathogenic bacteria into the mouth cavity occurs. Additionally, systemic endotoxemia develops (mainly because of lipopolysaccharide) on the background of the inflammatory-dystrophic processes in the tissues of mouth cavity. The following dental diseases are common in patients with hepatobiliary pathology: periodontitis, catarrhal and atrophic gingivitis, glossy, hipposalivation, hyperesthesia of enamel and dentine [2, 11-13].

The purpose of work was at estimation of the periodontal condition of patients with periodontal inflammatory diseases [PID] and hepatobiliary pathology [HBP].

Material and Methods. 128 patients have been examined: 25 are somatically healthy patients with clinically healthy parodontium (control group) and 102 patients with PID. Among them were 28 patients without pathology of internal organs (group I), 41 patients with diagnosis of nonalcoholic liver steatosis (LS) - group II, 134 patients with nonalcoholic steatohepatitis (SH) - group III. Patients are aged 25-43; 64, 8% (83/128) females, and 35, 2(45/128) males. Criteria for exception included patients with: teeth and jaw anomalies and deformations, prolonged defects of teeth rows and pathological erosion (wearing away), orthodontic apparatus, patients with chronic viral hepatitis, presence of focal hepatic lesions of liver (cyst, metastases, hepatic cellular carcinoma, hemangioma), HIV- infection, active tuberculosis, conducting antiviral therapy with interferon, presence of concomitant diseases of digestive organs, diabetes mellitus, tumors of any localization, refusal of patient from examination. Examination of patients included collection of the anamnesis, objective examination of mouth cavity, definition of hygiene index of Grin-Vermilion, gingivitis index (PMA, Parma, 1960) and bleeding index (PBI). Condition of hepatobiliary system of patients was evaluated by the physicians of gastroenterological department of Zolochiv District Hospital in Lviv Region. Level of the "liver" markers in the serum of patients was defined; namely: content of general bilirubin, activity of transaminase (AIAT and AsAT) and activity of alkaline phosphatase (AP) and generally accepted laboratory methods. Patients with hepatobiliary pathology received medical treatment in correspondence with the protocol of treatment by the specialists in this field. All the patients received complex treatment of periodontal diseases. Individual hygiene mode of mouth cavity with the following control of the degree of teeth cleaning from dental plaque was prescribed. As well, a toothbrush and toothpaste were selected individually. Hard teeth deposits were removed by the ultrasound machine «Pieson-Master 400 (Switzerland)». Selective functional grinding - in was conducted. Mathematical processing of the research results was performed by means of statistical program pack «EXCEL» and «STATISTICA».

Results and Discussion. Table 1 presents the results of definition of clinical - laboratory indexes of mouth cavity of patients with HBP. It was specified, that PMA had the highest index in the group of patients with PID with nonalcoholic SH (60,92±0,44). It surely exceeded similar index in the group of patients without pathology of biliary tract (40,77±0,60) and the group of patients with nonalcoholic LS(55,20±0,88). Grin Vermilion index was the highest in the group of PID patients with nonalcoholic SH (1,93±0,05). It significantly exceeded the index in the group of patients with LS of nonalcoholic origin (1,75±0,03) and the

group of PID patients ($1,54 \pm 0,04$). The same data can be seen by analyzing the showings of bleeding index: the highest value is $1,53 \pm 0,04$ in the group of patients with SH and LS ($1,32 \pm 0,38$), while the lowest one ($1,21 \pm 0,03$) is in patients of the group without somatic pathology. Therefore, periodontal status of patients with hepatic biliary pathology is much worse, as well as liver markers in the blood serum of mentioned patients, as presented in the Table 2.

Table 1

Index characteristics of conditions of paradontium tissues in patients with PID with pathology of hepatobiliary system

	ents with PID, without somatic pathology) n=28	Group II (patients with PID and LP) n=41	Group III (patients with PID and LS) n=34
PMA, %	$40,77 \pm 0,60$	$55,20 \pm 0,8^*$	$60,92 \pm 0,44^{*\# \circ}$
OHI-S, units	$1,54 \pm 0,04$	$1,75 \pm 0,03^*$	$1,93 \pm 0,05^{*\# \circ}$
PBI, points	$1,21 \pm 0,03$	$1,32 \pm 0,38^*$	$1,53 \pm 0,04^{*\# \circ}$

Note: * – index of authenticity ($p < 0,001$) between groups I and II; # – index of authenticity ($p < 0,001$) between groups I and III; ° – index of authenticity ($p < 0,001$) between groups II and III.

Table 2

Liver markers in the blood serum of patients with PID with pathology of hepatobiliary system

	Control Group (somatically healthy patients without PID diseases) n=25	Group II (patients with PID, without somatic pathology) n=28	Group II (patients with PID with LS) n=41	Group III (patients with PID with SH) n=34
Overall bilirubin, mk moles/l	$18,48 \pm 0,44$	$19,82 \pm 0,45^*$	$26,51^* \pm 0,32^{*\#}$	$56,65 \pm 0,34^{*\# \circ}$
AlAT, pts/l	$21,16 \pm 0,57$	$24,54 \pm 0,70^*$	$30,98 \pm 1,22^* \#$	$45,94 \pm 0,51^{*\# \circ}$
AcAT, pts/l	$33,16 \pm 0,44$	$40,71 \pm 0,49^*$	$50,27 \pm 1,38^* \#$	$83,18 \pm 1,84^{*\# \circ}$
LF mk mole/l	$1,17 \pm 0,04$	$1,23 \pm 0,01^*$	$1,61 \pm 0,02^* \#$	$2,28 \pm 0,03^{*\# \circ}$

Note: * – index of authenticity ($p < 0,001$) differences in comparison with the control group; # – index of authenticity ($p < 0,05$) differences between groups I, II and III; ° – index of authenticity ($p < 0,005$) differences between groups II and III.

After the conducted treatment clinical indices were likely to get better, that is proved by the data presented in the Table 3. Therefore PMA index in group I decreased by 8,96 times right after the treatment and by 6,91 times within 3 months. In patients of group II right after the treatment almost the same regularity was observed: PMA index decreased by 8,93 times, and by 7,02 times 3 months later. This index increased by 1.3 times in group I, and 1.27 times in group II. Index of Grin-Vermilion after the treatment decreased by 5,6 times right after the treatment in group I, and by 3,6 times 3 months later (in comparison with the index right after the treatment, increased by 1,6 times).

Table 3

Dynamic of clinical indices in PID patients under the influence of complex treatment (M± m)

Indices	Patients with hepatic biliary pathology					
	LS			SH		
	before treatment n=41	right after the treatment n=41	3 months later n=38	before treatment n=34	right after the treatment n=34	3 months later n=32
PMA, %	$55,20 \pm 0,88$	$6,16 \pm 0,30^*$	$7,98 \pm 0,18^{*\#}$	$60,92 \pm 0,44$	$6,82 \pm 0,33^*$	$8,67 \pm 0,20^{*\# \circ \times}$
OHI-S, %	$1,75 \pm 0,03$	$0,31 \pm 0,03^*$	$0,49 \pm 0,02^{*\#}$	$1,93 \pm 0,05$	$0,48 \pm 0,03^*$	$0,51 \pm 0,02^{*\# \circ \times}$
PBI, points	$1,32 \pm 0,38$	$0,18 \pm 0,03^*$	$0,20 \pm 0,03^{*\#}$	$1,53 \pm 0,04$	$0,20 \pm 0,03^*$	$0,23 \pm 0,03^{*\# \circ \times}$

Note: * – index of authenticity ($p < 0,001$) differences in comparison with the groups before treatment; # – index of authenticity ($p < 0,05$) differences between groups right after the treatment and groups 3 months later after the treatment; ° – index is not probable between groups of patients with LS and SH right after the treatment. X – index of authenticity ($p < 0,05$) differences between groups 3 months after the treatment.

In group II it decreased by 4.02 times right after the treatment, and by 3,78 times 3 months later, and in comparison with the values right after the treatment it increased by 1.06 times. Similar results are traced by analyzing the PBI index. The value right after the treatment: decreased by 7.3 times ($p < 0,001$), by 6,6 times 3 months later and increased, in comparison with the values right after the treatment, by 1.11 times. In group II the PBI index decreased by 7.65 times, by 6.65 times 3 months later and was 1.15 times higher the value right after the treatment.

Conclusions

With the help of conducted clinical-laboratory research we found out that patients with hepatobiliary pathology have increased probability of occurrence of periodontal inflammatory diseases. During the analyses of clinical-instrumental research of condition of mouth cavity, which included hygiene index, index evaluation of pathology of periodontal tissues and index of sanguifluousness (bleeding) of gums, patients with pathology of hepatobiliary system (table 1) and processing of the results of laboratory values, which signify the level of liver markers in the blood serum of examined patients (Table 2), it became possible to specify, that clinical picture of periodontal inflammatory diseases in patients with pathology of biliary tract is connected with the degree of liver lesion. Presence of pathology of hepatobiliary system in patients increases the risk of PID occurrence. Thus, the severity of PID depends on the activity of pathology of hepatobiliary system.

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Реферати

КЛІНІКО-ЛАБОРАТОРНЕ ОБГРУНТУВАННЯ ЗАЛЕЖНОСТІ ЗАПАЛЬНИХ ЗАХВОРЮВАНЬ ПАРОДОНТУ ВІД СТАНУ ГЕПАТОБІЛІАРНОЇ СИСТЕМИ

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У відповідності до існуючих уявлень про патогенез гепато-орального синдрому, в його розвитку вирішальну роль відіграє порушення антимікробної функції печінки. У статті описані результати дослідження стану тканин пародонту у 128 пацієнтів, які включають в себе клінічні спостереження та індексну оцінку (ОНІ-S, РМА, РВІ), а також печінкові маркери у сироватці крові. За допомогою проведених клініко-лабораторних досліджень ми переконалися, що у хворих з гепатобіліарною патологією збільшується ймовірність виникнення запальних захворювань пародонта, а після лікування захворювань печінки, пародонтологічні показники та індекс гігієни значно знижуються. Ці дані свідчать про залежність стану тканин пародонту від стану гепатобіліарної системи.

Ключові слова: Гепатобіліарна патологія, запальні захворювання пародонта, індексна оцінка.

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КЛИНИКО-ЛАБОРАТОРНОЕ ОБОСНОВАНИЕ ЗАВИСИМОСТИ ВОСПАЛИТЕЛЬНЫХ ЗАБОЛЕВАНИЙ ПАРОДОНТА ОТ СОСТОЯНИЯ ГЕПАТОБИЛИАРНОЙ СИСТЕМЫ

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В соответствии с существующим представлениями о патогенезе гепато-орального синдрома, в его развитии решающую роль играет нарушение антимикробной функции печени. В статье описаны результаты исследования состояния тканей пародонта у 128 пациентов, которые включают в себя клинические наблюдения и индексную оценку (ОНИ-S, РМА, РВИ), а также печеночные маркеры в сыворотке крови. С помощью проведенных клинико-лабораторных исследований мы убедились, что у больных с гепатобилиарной патологией увеличивается вероятность возникновения воспалительных заболеваний пародонта, а после лечения заболеваний печени, пародонтологические показатели и индекс гигиены значительно снижаются. Эти данные свидетельствуют о зависимости состояния тканей пародонта от состояния гепатобилиарной системы.

Ключевые слова: Гепатобилиарная патология, воспалительные заболевания пародонта, индексная оценка.

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LINEAR DIFFERENCE COMPUTED TOMOGRAPHY SIZE LARGE MOLAR TEETH IN HEALTHY MEN FROM CENTRAL REGIONS OF UKRAINE

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In 64 practically healthy men aged from 19 to 35 years from the central region of Ukraine, features of the differences in the computed tomographic size of large angular teeth and their roots, depending on the type of person, were determined. The most pronounced differences in the size of large angular teeth are set on the lower jaw for height, crown height, mesio-distal dimensions of the crown and neck, as well as the length of the near and far root of the right and left first and second teeth.

Key words: odontometry, computer tomography, large angular teeth, practically healthy men.

The question of regional features of cephalometric and odontometric indices has been actively studied throughout the world during the last decade [4, 6, 11, 14]. The research is aimed at identifying not only regional features, but also administrative and territorial units, but also natural, historical zones, regions with different types and intensities of anthropogenic pollution. Many studies are aimed at identifying discrepancies